# WHAT IS CLAIMED IS:

An imaging member comprising

 a supporting substrate,
 an optional electrically conductive layer,
 an optional hole blocking layer,
 a charge generating layer,

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a charge transport layer having at least a first (bottom) charge transport layer and a second (top) charge transport layer each of which comprises a hole mobility organic transport compound molecularly dispersed in a film forming polymer binder,

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wherein the first (bottom) charge transport layer comprises a hole mobility organic transport compound selected from the group consisting of triphenylmethane; bis(4-diethyamine-2-methylphenyl)phenylmethane; 4-4'-N,N'-diphenyl-N,N'-bis(3bis(diethylamino)-2,2'-dimethyltriphenylmethane; methylphenyl)-[1,1'-biphenyl]-4,4'diamine; N,N'-diphenyl-N,N'-bis(4-methylphenyl)-[1,1'-biphenyl]-4,4'diamine; N,N'-diphenyl-N,N'-bis(alkylphenyl)- 1,1 biphenyl-4,4'-diamine; N,N'-diphenyl-N,N'-bis(chlorophenyl)- 1,1 -biphenyl-4,4'-diamine; tritolylamine; N,N'-bis-(3,4-dimethylphenyl)-4-biphenyl amine; N,N',bis-(4-methylphenyl)-N,N'-bis(4-ethylphenyl)- 1,1'-3,3'-dimethylbiphenyl)-4,4'-diamine; phenanthrene diamine; arylamine; enamine; stylbene; and hydrozone molecules, and wherein the first (bottom) charge transport layer comprises between about 50 and about 90 weight percent hole mobility organic transport compound based on the total weight of the first (bottom) charge transport layer,

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and the second (top) charge transport layer comprises a film forming polymer binder and a high hole mobility organic transport compound selected from the group consisting of a diamine represented by the formula:

### FORMULA (II)

where R1, R2, R3, R4, R5, and R6 are each independently selected from the group consisting of hydrogen, halogen, and an alkyl, an aryl, or a cyclo-alkyl group having 1 to 18 carbon atoms, and wherein the second (top) charge transport layer comprises a lesser amount by weight of this high hole mobility diamine organic transport compound than the hole transport compound used in the first (bottom) charge transport layer,

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and the film forming polymer binder is selected from the group consisting of polycarbonates, polystyrene, polyesters, polyvinyl butyrals, polystyrene-b-polyvinyl pyridine, poly(vinyl butyral), poly(vinyl carbazole), poly(vinyl chloride), polyacrylates, polymethacrylates, copolymers of vinyl chloride and vinyl acetate, phenoxy resins, polyurethanes, poly(vinyl alcohol), and polyacrylonitrile.

- 2. An imaging member according to **claim 1**, wherein the second (top) charge transport layer comprises between about 20 to about 45 weight percent of the high hole mobility diamine organic charge transport compound of Formula (II) based upon the total weight of the second charge transport layer.
- 3. An imaging member according to **claim 1**, wherein the second (top) charge transport layer comprises between about 30 to about 40 weight percent of the high hole mobility diamine organic charge transport compound of Formula (II) based upon the total weight of the second charge transport layer.

- 4. An imaging member according to **claim 1**, wherein the first (bottom) charge transport layer comprises between about 50 to about 70 weight percent of the hole mobility organic charge transport compound based upon the total weight of the first charge transport layer.
- 5. An imaging member according to **claim 1**, wherein the hole transport compound in the first (bottom) charge transport layers is comprised of an aryl amine, N,N'-diphenyl-N,N'-bis(alkylphenyl)-1,1'-biphenyl-4,4'-diamine, represented by:

#### FORMULA (I)

wherein X is selected from the alkyl group consisting of methyl.

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- 6. An imaging member of **claim 5**, wherein the aryl diamine in the first (bottom) charge transport layer is N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'diamine.
- 7. An imaging member of **claim 5**, wherein the aryl diamine in the first (bottom) charge transport layer is N,N'-diphenyl-N,N'-bis(4-methylphenyl)-[1,1'-biphenyl]-4,4'diamine.
- 35 8. An imaging member of **claim 1**, wherein the film forming binder used in the transport layers is selected from a bisphenol A polycarbonate of poly(4,4'-isopropylidene diphenyl) carbonate or a poly(4,4'-diphenyl)-1,1'-cyclohexane carbonate.
- 40 9. An imaging member of **claim 1**, wherein the film forming binder used in both transport layers is the same.

- 10. An imaging member comprising:
  - a supporting substrate;

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- a charge generating layer deposited thereon; and,
- a charge transport layer deposited on the charge generating layer, wherein the charge transport layer comprises at least a first charge transport layer and a second charge transport layer deposited thereon, and wherein each of said charge transport layers comprises a solid solution of charge transport compounds molecularly dispersed in a binder, wherein the charge transport compounds of the first charge transport layer comprise aryl amines or diamines and the charge transport compounds of the second charge transport layer comprise high mobility hole transport molecules, and wherein the weight percent of charge transport compounds in the solid solution of the second charge transport layer is less than the weight percent of charge transport components of the first charge transport layer.
- 11. The imaging member of **claim 10**, wherein the binder of the first charge transport layer is the same as the binder of the second charge transport layer.
- 12. The imaging member of **claim 10**, wherein the binder of the first charge transport layer is different than the binder of the second charge transport layer.
- 13. The imaging member of **claim 10**, wherein the first charge transport layer comprises from about 50 to about 90 weight percent of charge transport compounds based on the total weight of the layer and the second charge transport layer comprises from about 25 to about 40 weight percent of the charge transport compounds based on the total weight of the layer.
- 14. The imaging member of **claim 10**, wherein the amount of charge transport compounds in the first charge transport layer comprise from about 50 to about 70 weight percent based on the total weight of the layer.

- 15. The imaging member of **claim 10**, wherein the amount of charge transport compounds in the second charge transport layer comprise from about 30 to about 40 weight percent based on the total weight of the layer.
- 16. The imaging member of **claim 10**, wherein the aryl diamines are of the formula

# FORMULA (I)

$$x \longrightarrow N \longrightarrow N$$

- 5 wherein X is selected from the group consisting of alkyl, hydroxyl, and halogen.
  - 17. The imaging member of **claim 10**, wherein the charge transport compounds of the first charge transport layer are selected from the group consisting of tritolylamine; arylamine; enamine phenanthrene diamine; N,N'bis-(3,4-dimethylphenyl)-4-biphenyl amine; N,N',bis-(4-methylphenyl)-N,N'bis(4-ethylphenyl)-1,1'-3,3'-dimethylbiphenyl)-4,4'diamine; 4-4'-bis(diethylamino)-2,2'-dimethyltriphenylmethane; N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'diamine; N,N'-diphenyl-N,N'-bis(4-methylphenyl)-1,1'-biphenyl-4,4'diamine; N,N'-diphenyl-N,N'-bis(alkylphenyl)-1,1'-biphenyl-4,4-diamine; and N,N'-diphenyl-N,N'-bis(chlorophenyl)-1,1'-biphenyl-4,4'diamine.

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18. The imaging member of **claim 17**, wherein the aryl diamine is N,N¹-diphenyl-N,N-bis¹(3-methyl phenyl)-1,1¹-biphenyl-4,4¹-diamine.

19. The imaging member of **claim 10**, wherein the high mobility charge transport molecules are of the formula

#### FORMULA (II)

wherein R1, R2, R3, R4, R5, and R6 are each independently selected from the group consisting of hydrogen, halogen, and an alkyl, an aryl, or a cycloalkyl group having 1 to 18 carbon atoms.

22. The imaging member of **claim 10**, wherein the binder is selected from the group consisting of polyesters, polyvinyl butyrals, polycarbonates, polystyrene, and polyvinyl formats.

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23. An imaging member comprising a supporting substrate, an optional electrically conductive layer, an optional hole blocking layer, a charge generating layer,

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a dual charge transport layer having a first (bottom) and a second (top) charge transport layer each of which is a solid solution comprising a hole mobility organic transport compound molecularly dispersed or dissolved in a film forming polymer binder,

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wherein the first (bottom) charge transport layer comprises a hole mobility organic transport compound selected from the group consisting of triphenylmethane; bis(4-diethyamine-2-methylphenyl)phenylmethane; 4-4'-bis(diethylamino)-2,2'-dimethyltriphenylmethane; N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'diamine; N,N'-diphenyl-N,N'-bis(4-methylphenyl)-[1,1'-biphenyl]-4,4'diamine; N,N'-diphenyl-N,N'-bis(alkylphenyl)- 1,1 -biphenyl-4,4'-diamine; N,N'-diphenyl-N,N'-bis(chlorophenyl)- 1,1 -biphenyl-

4,4'-diamine; tritolylamine; N,N'-bis-(3,4-dimethylphenyl)-4-biphenyl amine; N,N',bis-(4-methylphenyl)-N,N'-bis(4-ethylphenyl)- 1,1'-3,3'-dimethylbiphenyl)-4,4'-diamine; phenanthrene diamine; arylamine; enamine; stylbene; and hydrozone molecules, and wherein the first (bottom) charge transport layer comprises between about 50 and about 90 weight percent hole mobility organic transport compound based on the total weight of the first (bottom) charge transport layer,

and the second (top) charge transport layer comprises a film forming polymer binder and a high hole mobility organic transport compound selected from the group consisting of a diamine represented by the formula:

## FORMULA (II)

where R1, R2, R3, R4, R5, and R6 are each independently selected from hydrogen, halogen, and an alkyl, an aryl, or a cyclo-alkyl group having 1 to 18 carbon atom, and wherein the second (top) charge transport layer comprises a lesser amount by weight of this high hole mobility organic transport compound than the first (bottom) charge transport layer,

and the film forming polymer binder is selected from the group consisting of polycarbonates, polystyrene, polyesters, polyvinyl butyrals, polystyrene-b-polyvinyl pyridine, poly(vinyl butyral), poly(vinyl carbazole), poly(vinyl chloride), polyacrylates, polymethacrylates, copolymers of vinyl chloride and vinyl acetate, phenoxy resins, polyurethanes, poly(vinyl alcohol), and polyacrylonitrile.

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